John Gantner 3943 Eagle Parkway Redding, California 96001

1<sup>st</sup> Quarter 2005 Ground Water Monitoring Report 1<sup>st</sup> Quarter 2005 Operations and Maintenance Report Former Service Station 1680 Mendocino Avenue Santa Rosa, Califomia ECM Project #98-439-14

#### Dear Mr. Gantner:

This report provides the results of ground water monitoring at the former service station at 1680 Mendocino Avenue in Santa Rosa, California (Figure 1, Appendix A). It also provides the first quarter 2005 report of operations and maintenance for the ground water extraction (GWE) system operating at the site.

### **Ground Water Monitoring**

On March 9, 2005, ECM personnel visited the site for semi-annual monitoring. Ground water elevations were measured and ground water samples were collected from all five monitoring wells (MW-1 through MW-5) in accordance with the site monitoring program. The well locations are shown on Figure 2 (Appendix A).

Well heads and well vaults were observed to be in good condition. Free-phase hydrocarbons were not observed in any of the wells. Water level data is shown in Table 1 (Appendix B). Water levels are measured monthly in monitoring wells MW-1 through MW-5 and piezometers PZ-1 thorough PZ-3. A ground water elevation contour map using ground water elevations from March 1, 2005 is included as Figure 2 (Appendix A).

The samples were forwarded under chain of custody record to Entech Analytical Labs Inc., of Santa Clara, California for analysis. Analytical results for ground water are included in Table 2 (Appendix B). Ground water samples were collected in accordance with ECM Standard Operating Procedure - Ground Water Sampling (Appendix E). Purge water and decon rinseate were transferred to the system holding tank for treatment and permitted discharge. The chain of custody document and laboratory analytical report are included as Appendix C. The water sampling data sheets are included as Appendix D.

Analytical results for samples collected during the March 9, 2005 monitoring event were consistent with results from previous monitoring events. Monitoring wells MW-2, MW-3, and

MW-4 represent the most impacted area of the site. Moderate to high concentrations of gasoline and BTEX were detected in the samples from wells MW-2, MW-3, and MW-4. Concentrations in MW-3 and MW-4 were typical of previous results. Contaminant concentrations in the sample from MW-2 were relatively low compared to previous results for MW-2. More data points are necessary before a trend can be confirmed in MW-2.

Analytical results for samples collected from wells MW-1 and MW-5 were below detection limits for all contaminants of concern. This is reflective of a reduction trend for contamination in well MW-1. MW-5 is located approximately 350 ft. downgradient of the site. Results for samples from MW-5 have consistently been low or below detection limits for all contaminants of concern.

The next ground water monitoring event is scheduled for September, 2005.

### **System Operations and Maintenance**

System layout and remediation pad details are shown in Figure 2, Appendix A. The system consists of Grundfos submersible, electric pumps set at approximately 34 feet below ground surface in wells EX-1, EX-2, and EX-3. The pumps have been adjusted to extract ground water at approximately 15 gallons per minute (gpm). Extracted ground water is pumped through three 2,000 pound activated carbon vessels and discharged to the sanitary sewer under permit from the Santa Rosa Subregional Water Reclamation System.

GWE system construction was completed in September 2004, and operated for system testing and sampling between September 3 and November 11, 2004. Continuous operations began on November 11, 2004. The system ran continuously during the first quarter of 2005, with downtime only for routine maintenance. Between system startup and April 5, 2005, the system extracted 2,465,264 gallons of ground water, according to system totalizer readings (Table 4, Appendix B).

GWE system performance can be evaluated by the mass of hydrocarbons removed. Since hydrocarbons have a low solubility in water, mass of hydrocarbons removed by a ground water extraction system is typically low relative to the quantity of hydrocarbons sorbed to soil. Another measure of system performance is the system's ability to control the offsite migration of impacted ground water.

Mass of hydrocarbon removed is calculated using system totalizer readings and ground water influent lab data. Between December 30, 2004 and April 5, 2005 a total of 2,134,315 gallons was extracted by the system, at between 9 and 26 gallons per minute. Analytical results for the influent samples collected on January 5, 2005, February 11, 2005, and April 7, 2005 reported concentrations of gasoline at 3,100 ppb, 370 ppb, and 2,100 ppb respectively. Influent analytical results are shown in Table 3, Appendix B. Analytical laboratory reports are included in

Appendix C. Assuming analytical results are typical for the period, a total mass of approximately 12 kg of hydrocarbon was extracted by the system during the fourth quarter of 2004. Cumulative hydrocarbon removal is depicted in Graph 1, Appendix B.

Piezometers PZ-1 through PZ-3 have been installed to measure drawdown generated by the extraction system. Drawdown is used to measure the ability of the system to control offsite migration of impacted water. Water levels in piezometers, extraction wells, and ground water wells are measured on a monthly basis to verify system performance. Significant drawdown in the piezometers indicates the system is controlling offsite plume migration. The ground water contour map from March 1, 2005, included as Figure 3, Appendix A, depicts the influence of the remediation system.

Thank you for the opportunity to provide environmental services to you. Please call if you have any questions.

Sincerely, ECM Group

David Hazard

**Environmental Scientist** 

Chris Bramer

Professional Engineer #C048846

Appendices: A - Figures

B - Tables

C - Chain of Custody and Laboratory Analytical Report

D - Water Sampling Data SheetsE - Standard Operating Procedures

cc: Joan Fleck, North Coast Regional Water Quality Control Board Michael Caesar, Environmental Health and Safety @ SRJC

APPENDIX A FIGURES

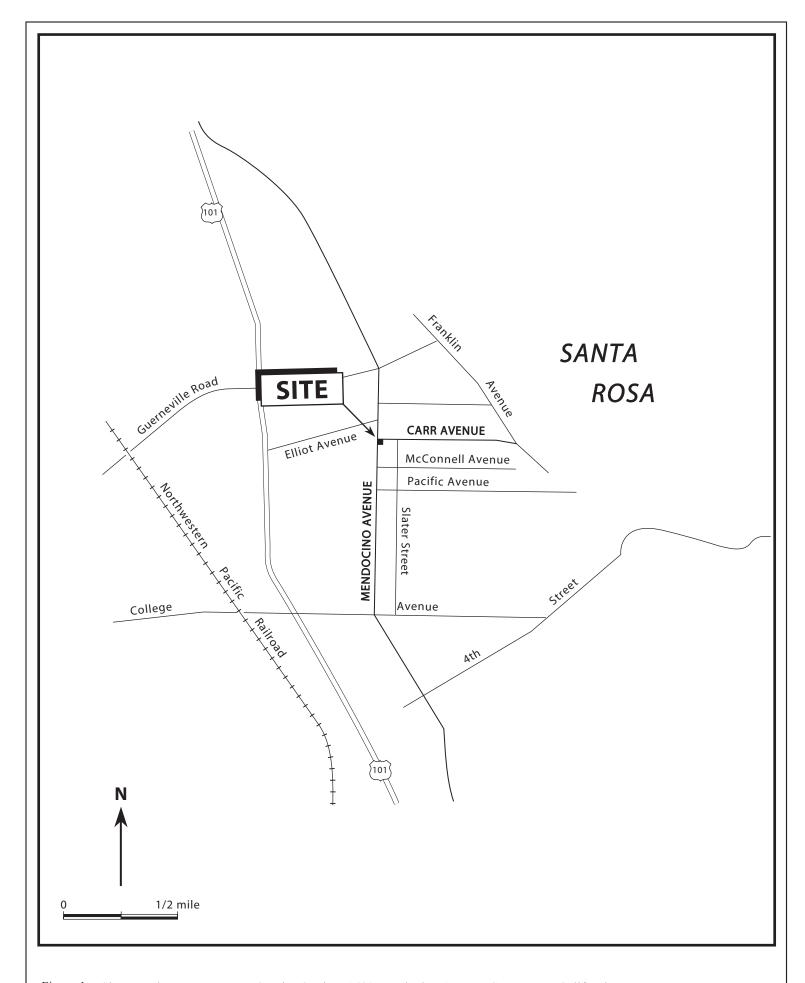


Figure 1. Site Location Map - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

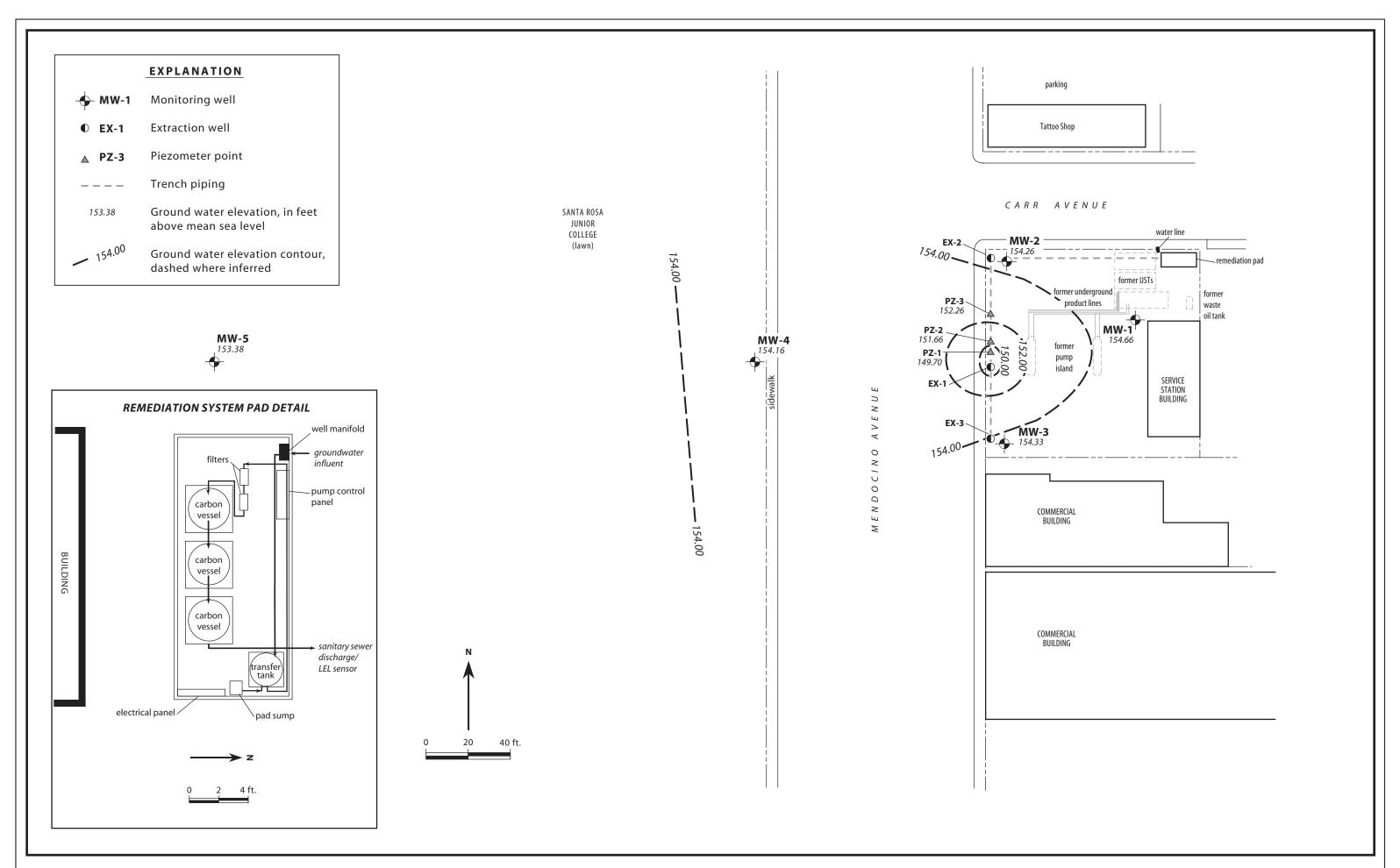


Figure 2. Monitoring Well Locations, Ground Water Contour Map and Remediation System Layout - March 1, 2005 - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Appendix B

**Tables and Graphs** 

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1680 Mendocino Avenue, Santa Rosa, California

Well ID	Sample Date	TOC (Ft, msl)	DTW (Ft)	GWE (Ft, msl)	Screen	Sand Pack	Bentonite/	Notes
					Interval	Interval	Grout Interval	
MW-1	11/23/1998	158.90	9.70	149.20	5 - 15	4 - 15	0 - 4	
	3/9/1999		4.51	154.39				
	6/28/1999		8.71	150.19				
	9/29/1999		10.48	148.82				
	12/30/1999		10.15	148.75				
	3/29/2000		6.17					
	7/11/2000		9.05	149.85				
	10/27/2000		11.17	147.73				
	12/15/2000		9.59	149.31				
	3/7/2001		5.24	153.66				
	6/20/2001		9.47	149.43				
	9/11/2001		11.00	147.90				
	12/10/2001	161.56	7.92		-			Resurveyed for EDF compliance, January 9, 2002.
	3/6/2002		6.79		-			
	6/5/2002		8.76	152.80				
	9/23/2002		10.75		-			
	3/26/2003		6.46		-			
	10/3/2003		10.50		-			
	3/10/2004		5.89					
	9/17/2004		10.76					
	3/1/2005		6.90					
	3/9/2005		6.18	155.38				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1680 Mendocino Avenue, Santa Rosa, California

Well ID	Sample Date	TOC (Ft, msl)	DTW (Ft)	GWE (Ft, msl)	Screen	Sand Pack	Bentonite/	Notes
	_				Interval	Interval	Grout Interval	
MW-2	11/23/1998	158.58	9.49	149.09	5 - 15	4 - 15	0 - 4	
	3/9/1999		5.81	152.77				
	6/28/1999		8.66	149.92				
	9/29/1999		10.53	148.05				
	12/30/1999		10.33	148.25				
	3/29/2000		6.41	152.17				
	7/11/2000		8.98	149.60				
	10/27/2000		10.56	148.02				
	12/15/2000		9.22	149.36				
	3/7/2001		5.00	153.58				
	6/20/2001		9.14	149.44				
	9/11/2001		12.10	146.48				
	12/10/2001	161.10	5.65					Resurveyed for EDF compliance, January 9, 2002.
	3/6/2002		6.31	154.79				
	6/5/2002		8.42					
	9/23/2002		10.35					
	3/26/2003		6.22					
	10/3/2003		10.26	150.84				
	3/10/2004		5.62					
	9/17/2004		10.28					
	3/1/2005		6.84					
	3/9/2005		5.92	155.18				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1680 Mendocino Avenue, Santa Rosa, California

Well ID	Sample Date	TOC (Ft, msl)	DTW (Ft)	GWE (Ft, msl)	Screen	Sand Pack	Bentonite/	Notes
					Interval	Interval	Grout Interval	
MW-3	11/23/1998	159.31	10.59	148.72	5 - 15	4 - 15	0 - 4	
	3/9/1999		5.49	153.82				
	6/28/1999		9.42	149.89				
	9/29/1999		11.46	147.85				
	12/30/1999		11.07	148.24				
	3/29/2000		7.06	152.25				
	7/11/2000		9.74	149.57				
	10/27/2000	159.38	11.81	147.57				TOCs surveyed on October 20, 2000.
	12/15/2000		10.81	148.57				
	3/7/2001		5.98	153.40				
	6/20/2001		10.18	149.20				
	9/11/2001		10.80	148.58				
	12/10/2001	161.95	7.75	151.63				Resurveyed for EDF compliance, January 9, 2002.
	3/6/2002		7.31	154.64				
	6/5/2002		9.47	152.48				
	9/23/2002		11.86	150.09				
	3/26/2003		7.20		-			
	10/3/2003		11.35	150.60				
	3/10/2004		6.54	155.41				
	9/17/2004		11.90					
	3/1/2005		7.62					
	3/9/2005		6.63	155.32				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1680 Mendocino Avenue, Santa Rosa, California

Well ID	Sample Date	TOC (Ft, msl)	DTW (Ft)	GWE (Ft, msl)	Screen	Sand Pack	Bentonite/	Notes
	F		( )	( ), - )	Interval	Interval	Grout Interval	
MW-4	10/27/2000	159.30	12.56	146.74		4 - 20	0 - 4	TOCs surveyed on October 20, 2000.
	12/15/2000	1	12.05	147.25				
	3/7/2001		7.37	151.93				
	6/20/2001		11.44	147.86				
	9/11/2001		12.88	146.42				
	12/10/2001	161.87		151.85				Resurveyed for EDF compliance, January 9, 2002.
	3/6/2002		7.85	154.02				
	6/5/2002		10.37	151.50				
	9/23/2002		12.11	149.76				
	3/26/2003		8.25	153.62				
	10/3/2003		12.00	149.87				
	3/10/2004		7.50	154.37	1			
	9/17/2004		12.22	149.65				
	3/1/2005		7.71	154.16				
	3/9/2005		7.51	154.36				
MW-5	10/27/2000	156.88	11.74	145 14	5 - 20	4 - 20	0 - 4	TOCo minuted on Oatob at 20, 2000
W W-5	10/27/2000 12/15/2000		11.74	145.14 145.73		4 - 20	0 - 4	TOCs surveyed on October 20, 2000.
	3/16/2001	1	7.27	143.73				
	6/20/2001		10.69	149.01				
	9/11/2001		12.00	144.88				
	12/10/2001	159.45		149.88				Resurveyed for EDF compliance, January 9, 2002.
	3/6/2002		7.70	151.75				resurveyed for EDT compitance, surreary 7, 2002.
	6/5/2002		9.48	149.97	-			
	9/23/2002				1			Well inaccessible.
	3/26/2003		7.53	151.92	1			
	10/3/2003	1	11.10	148.35				
	3/10/2004	1	6.53	152.92				
	9/17/2004	1	11.61	147.84				
	3/1/2005		6.07	153.38				
	3/9/2005		6.47	152.98				
	-	-						
PZ-1	3/1/2005	161.89	12.19	149.70				
	1	1	1			1	1	
PZ-2	3/1/2005	161.77	10.11	151.66				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1680 Mendocino Avenue, Santa Rosa, California

Well ID	Sample Date	TOC (Ft, msl)	DTW (Ft)	GWE (Ft, msl)	Screen	Sand Pack	Bentonite/	Notes
					Interval	Interval	Grout Interval	
PZ-3	3/1/2005	161.81	9.25	152.56				

## **Explanation:**

TOC = Top of Casing

ft = feet

msl = Mean Sea Level

DTW = Depth to Water

GWE = Ground Water Elevation

Table 2. Analytical Results for Ground Water - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Sample ID	Date Sampled	TPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
		<			ppb		>	
MW-1	11/30/1998	16,000	140	28	900	1,900	<250	
	3/9/1999	4,000	53	8.7	74	79	40	
	6/28/1999	2,400		1.1	150			
	9/29/1999							
	12/30/1999				1,000			
	3/29/2000				370		<100	
	7/11/2000				160		< 50	
	10/27/2000			7.4	120		< 2.0	
	12/15/2000	,			300			
	3/7/2001	4,300		15	400		223	
	6/20/2001	670		9.5	83		< 5.0	
	9/11/2001	1,700	130	64	110	75	16	
	12/10/2001	2,500	280	160	140	200	9.7	
	3/6/2002	< 50			< 0.50	< 0.50		
	6/5/2002				< 0.50	< 0.50	2.3	
	9/23/2002	1,800	240	120	140	440	1.6	
	3/26/2003	380	43	11	26		2	
	10/3/2003	640	140	16	39	54	<1	
	3/10/2004	260	45	14	14		1	
	9/17/2004	220		8.6	22	38	<1	
	3/9/2005	<25	< 0.5	<0.5	<0.5	< 0.5	<1	

Table 2. Analytical Results for Ground Water - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Sample ID	Date Sampled	TPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
		<			ppb		>	
MW-2	11/30/1998	27,000	2,600	200	1,700	3,700	640	
	3/9/1999	49,000	3,400	270	3,400	4,700	530	
	6/28/1999	37,000	4,200	250	3,500	5,000	780	
	9/29/1999	36,000	4,000	230	3,800	4,000	530	
	12/30/1999	31,000	2,900	150	4,400	5,100	< 500	
	3/29/2000		3,100	150	3,100	2,400	520	
	7/11/2000				3,600	2,200	650	
	10/27/2000	38,000	3,400	130	3,100	2,900	< 20	
	12/15/2000	49,000	2,700	110	3,000	2,800	< 50	
	3/7/2001	26,000	3,200	88	3,500	2,000	18	Tertiary butanol detected at 12 ppb.
	6/20/2001	21,000	1,900	130	3,500	2,300	< 50	
	9/11/2001	22,000	1,600	140	4,100	1,600	< 50	
	12/10/2001	20,000	1,900	200	3,000	1,500	<100	
	3/6/2002	< 50	9.4	< 0.50	< 0.50	< 0.50	2.7	
	6/5/2002	8,900	410	29	1,400	400	6.6	
	9/23/2002	18,000	1,100	160	2,200	1,100	<100	
	3/26/2003	14,000	810	57	2,500	496	64	
	10/3/2003	20,000	930	61	3,100	470	<40	
	3/10/2004	8,300			1,200	170	<20	
	9/17/2004	8,600	420	36	1,300	150	<40	
	3/9/2005	1,400	31	2.3	99	9.5	<2	

Table 2. Analytical Results for Ground Water - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Sample ID	Date Sampled	TPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
		<			ppb		>	
MW-3	11/30/1998	56,000	6,600	4,600	1,400	5,800	1,100	
	3/9/1999	220,000	24,000	15,000	5,000	23,000	2,400	
	6/28/1999	89,000	13,000	6,800	2,800	12,000	1,500	
	9/29/1999	100,000	13,000	4,100	3,000	12,000	1,400	
	12/30/1999	58,000	11,000	5,100	2,400	11,000	890	
	3/29/2000	48,000	10,000	3,300	2,000	8,600	1,100	
	7/11/2000	64,000	14,000	2,100	2,600	10,000	<2,500	
	10/27/2000	88,000	16,000	6,100	2,700	10,000	790	Tertiary Butanol detected at 400 ppb. See laboratory
								analytic reports for detection limits.
	12/15/2000	120,000	15,000	5,800	2,300	9,600	830	
	3/7/2001	44,000	11,000	4,900	2,100	8,200	460	
	6/20/2001	55,000	12,000	3,900	2,500	10,000	340	
	9/11/2001	48,000	13,000	2,100	2,600	9,700	390	
	12/10/2001	76,000	16,000	6,800	3,600	13,000	< 500	
	3/6/2002	53,000	11,000	4,800	2,300	12,000	540	
	6/5/2002	25,000	6,300	2,400	1,900	7,500	340	
	9/23/2002	39,000	6,800	950	1,200	5,000	1,100	
	3/26/2003	54,000	7,800	2,500	3,100	11,400	310	TAME was detected at 23 ppb.
	10/3/2003	50,000	9,500	720	2,300	6,400	430	
	3/10/2004	40,000	8,500		2,800	9,300	220	
	9/17/2004	40,000	9,200	700	2,600	7,900	290	
	3/9/2005	41,000	5,300	1,200	2,700	11,000	<200	

Table 2. Analytical Results for Ground Water - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Sample ID	Date Sampled	TPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
		<			ppb		>	
MW-4	10/27/2000	18,000	6,200	13	79	15	1,100	Tertiary Butanol detected at 560 ppb.
	12/15/2000	22,000	4,400	<25	110	30	1,700	
	3/7/2001	10,000	4,400	< 50	89	55	600	Tertiary butanol detected at 280 ppb.
	6/20/2001	16,000	5,300	50	130	< 50	900	
	9/11/2001	8,200	2,800	51	56	<25	2,600	
	12/10/2001	11,000	3,300	68	140	120	1,400	
	3/6/2002	6,600	1,800	23	110	<10	810	
	6/5/2002	7,800	2,700	33	85	23	340	
	9/23/2002	11,000	2,400	27	56	16	980	
	3/26/2003	6,600	1,600	20	64	16	210	TAME detected at 2 ppb.
	10/3/2003	12,000	2,100	< 50	80	<100	230	
	3/10/2004	4,600	1,100	28	34	< 20	160	
	9/17/2004	3,600	730	13	17	< 20	110	
	3/9/2005	8,000	860	17	40	<10	83	
	-		-				-	

Table 2. Analytical Results for Ground Water - Former Service Station, 1680 Mendocino Avenue, Santa Rosa, California

Sample ID	Date Sampled	TPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
		<			ppb		>	
MW-5	10/27/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 2.0	
	12/15/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	3/16/2001	92	5.4	5.6	2.3	6.2	< 2.0	
	6/20/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	
	9/11/2001	91	14	11	4	12	< 5.0	
	12/10/2001	56	8.2	1.6	1.8	3.3	<5	
	3/6/2002	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	
	6/5/2002	< 50	< 0.50	< 0.50	< 0.50	< 0.50	2.8	
	9/23/025							Well inaccessible.
	3/26/2003	65	12	3	<1	7	<1	
	10/3/2003	110	23	3.6	7.4	12	<1	No other oxygenates were detected.
	3/10/2004	85	15	9.8	5.9	19	1	No other oxygenates were detected.
	9/17/2004	43	6.8	2.2	3.7	8.4	<1	
	3/9/2005	<25	< 0.5	< 0.5	< 0.5	<0.5	<1	

### **Explanation:**

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline MTBE = Methyl tert butyl ether ppb = parts per billion

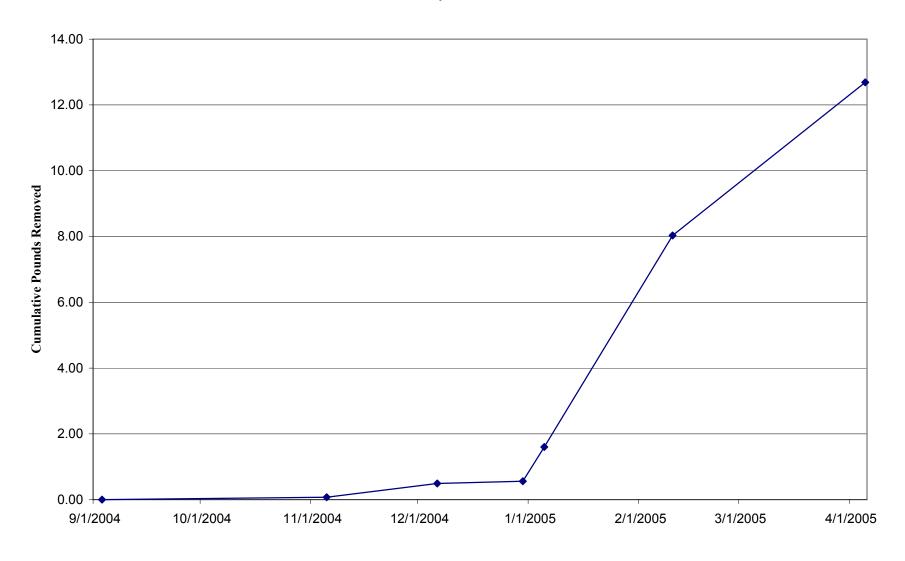
Table 3. Analytical Results for Influent Samples - 1680 Mendocino Avenue, Santa Rosa, California

Sample Date	TPH(G)	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Notes
	<		p	pb		>	
9/3/2004	4,800	480	34	800	170	83	
11/5/2004	450	35	1	35	6	9	
12/7/2004	360	28	2	66	15	9	
1/5/2005	3,100	83	12	340	68	8	
2/11/2005	370	9	2	21	16	7	
4/7/2005	2,100	38	5	130	42	<5	

Table 4. Ground Water Extraction System Performance Data - 1680 Mendocino Avenue, Santa Rosa, California

Date	totalizer reading		influent concentration TPH(G) ppb	hydrocarbon removal (kg)	cumulative hydrocarbon removal (kg)
9/3/2004	1,091		4,800		0.00
11/5/2004	8,372	7,281	450	0.07	0.07
12/6/2004	280,863	272,491	360	0.42	0.49
12/30/2004	330,949	50,086	360	0.07	0.56
1/5/2005	489,904	158,955	3,100	1.04	1.60
2/10/2005	1,469,620	979,716	370	6.43	8.03
4/5/2005	2,465,264	995,644	2,100	4.65	12.69

## **Cumulative Hydrocarbon Removal**



Graph 1: Cumulative pounds of hydrocarbon removed by ground water extraction (GWE) system - 1680 Mendocino Avenue, Santa Rosa, California

LABORATORY ANALYTICAL	APPENDIX C RESULTS AND CHAIN	N OF CUSTODY RECORD

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Jim Green

Certificate ID: 41929 - 1/13/2005 9:52:17 PM

ECM Group

290 W. Channel Rd. Benicia, CA 94510

Order Number: 41929

Project Name: Gantner

Project Number: 98-439-60

Date Received: 1/7/2005 1:03:07 PM

P.O. Number: 98-439-60

## Certificate of Analysis - Final Report

On January 07, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

<u>Test</u>

Method

Comments

Liquid

8260Petroleum

EPA 8260B

TPH as Gasoline

EPA 8015 MOD. (Purgeable)

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy

Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 1/7/2005 P.O. Number: 98-439-60 Sample Collected by: Client

### Certificate of Analysis - Data Report

Lab #: 41929-001

Sample ID: Influent

Matrix: Liquid Sample Date: 1/5/2005

12:15 PM

Method: EPA 8015 MOD. (Purgeable)

Prep Method: EPA 5030 Parameter	oB - Purge-and-1 rap for Result	r Aqueous Flag	Sample DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	3100		5	250	μg/L	N/A	N/A	01/10/2005	WGC4050110
Surrogate	Surrogate Recovery	Cor	ntrol Li	mits (%)				Analyzed by: mrua	n
4-Bromofluorobenzene	257***		65 -	135				Reviewed by: MTU	J

<sup>\*\*\*</sup> High surrogate recovery for BFB due to matrix interference.

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	83		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Toluene	12		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Ethyl Benzene	340		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Xylenes, Total	68		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Methyl-t-butyl Ether	7.9		1	1	μg/L	N/A	N/A	01/10/2005	WMS2050110
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110
tert-Butanol (TBA)	ND		1	10	μg/L	N/A	N/A	01/10/2005	WMS2050110
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110

Surrogate	Surrogate Recovery	Control Limits (%				
4-Bromofluorobenzene	98.8	75	-	125		
Dibromofluoromethane	105	75	-	125		
Toluene-d8	103	75	-	125		

Analyzed by: MTu

Reviewed by: GGUEORGUIEVA

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 1/7/2005 P.O. Number: 98-439-60 Sample Collected by: Client

### **Certificate of Analysis - Data Report**

Lab #: 41929-002 Sample ID: Effluent

Matrix: Liquid Sample Date: 1/5/2005

12:20 PM

Method: EPA 8015 MOD. (Purgeable)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	50	μg/L	N/A	N/A	01/10/2005	WGC4050110
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mruar	n

4-Bromofluorobenzene

Surrogate Recovery 98.5

65 - 135

Reviewed by: MTU

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Toluene	ND		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	01/10/2005	WMS2050110
Methyl-t-butyl Ether	ND		1	1	μg/L	N/A	N/A	01/10/2005	WMS2050110
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110
tert-Butanol (TBA)	ND		1	10	μg/L	N/A	N/A	01/10/2005	WMS2050110
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	01/10/2005	WMS2050110

Surrogate	Surrogate Recovery	Control Limits (%)				
4-Bromofluorobenzene	99.4	75 - 125				
Dibromofluoromethane	104	75 - 125				
Toluene-d8	105	75 - 125				

Analyzed by: MTu

Reviewed by: GGUEORGUIEVA

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

# Quality Control - Method Blank

**Liquid**Validated by: XBIAN - 01/11/05

QC Batch ID: WMS2050110

**Analysis Date: 1/10/2005** 

Method Blank	Meth	od: <b>EPA 826</b> 0	В			
Parameter			Result	DF	PQLR	Units
Benzene			ND	1	0.5	μg/L
Diisopropyl Ether			ND	1	5	μg/L
Ethyl Benzene			ND	1	0.5	μg/L
Ethyl-t-butyl Ether			ND	1	5	μg/L
Methyl-t-butyl Ether			ND	1	1	μg/L
tert-Amyl Methyl Ether			ND	1	5	μg/L
ert-Butanol (TBA)			ND	1	10	μg/L
`oluene			ND	1	0.5	μg/L
Xylenes, Total			ND	1	0.5	μg/L
Surrogate for Blank	% Recovery	<b>Control Limits</b>				
4-Bromofluorobenzene	98.7	75 - 125				
Dibromofluoromethane	103	75 - 125				
Coluene-d8	105	75 - 125				

## Quality Control - Laboratory Control Spike / Duplicate Results Liquid

Reviewed by: XBIAN - 01/11/05

QC Batch ID: WMS2050110

**Analysis Date: 1/10/2005** 

LCS Method:	EPA 8260B						C	onc. Units:	μg/L
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	< 0.2	20.0	20.5	LCS	1/10/2005	102			80 - 120
Methyl-t-butyl Ether	< 1	20.0	22.8	LCS	1/10/2005	114			80 - 120
Toluene	< 0.2	20.0	21.0	LCS	1/10/2005	105			80 - 120
Surrogate	% Recovery	Control Lin	nits		and the second s				
4-Bromofluorobenzene	102	75 - 125	;						
Dibromofluoromethane	108	75 - 125	5						
Toluene-d8	102	75 - 125	•						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
LCSD Method:	EPA 8260B						C	onc. Units:	μg/L
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	< 0.2	20.0	20.4	LCSD	1/10/2005	102	0.5	25	80 - 120
Methyl-t-butyl Ether	< 1	20.0	22.6	LCSD	1/10/2005	113	1.0	25	80 - 120
Toluene	<0.2	20.0	20.5	LCSD	1/10/2005	103	2.6	25	80 - 120
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	102	75 - 125	5						
Dibromofluoromethane	108	75 - 125	5						
Toluene-d8	100	75 - 125	5						

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

## **Quality Control - Method Blank**

#### Liquid

Validated by: MTU - 01/12/05

QC Batch ID: WGC4050110

Analysis Date: 1/10/2005

**Method Blank** 

Method: EPA 8015 MOD. (Purgeable)

Parameter

Result

ND

DF

**POLR** 50

Units μg/L

TPH as Gasoline

Surrogate for Blank 4-Bromofluorobenzene % Recovery Control Limits 94.0

**Quality Control - Laboratory Control Spike / Duplicate Results** 

Liquid

Reviewed by: MTU - 01/12/05

QC Batch ID: WGC4050110

Analysis Date: 1/10/2005

Method: EPA 8015 MOD. (Purgeable)

Conc. Units: µg/L

LCS Blank (MDL) Spike Amt SpikeResult QC Type Analysis Date **Parameter** 

RPD RPD Limits Recovery Limits

TPH as Gasoline

250

239

1/10/2005 LCS

% Recovery 95.7

65 - 135

Surrogate

% Recovery

**Control Limits** 

102 4-Bromofluorobenzene

65 - 135

Conc. Units: µg/L

LCSD Parameter

TPH as Gasoline

Method: EPA 8015 MOD. (Purgeable) Blank (MDL) Spike Amt SpikeResult QC Type Analysis Date

250

% Recovery

RPD

25

RPD Limits Recovery Limits

% Recovery

239

LCSD

1/10/2005

95.6

0.2

65 - 135

Surrogate 4-Bromofluorobenzene

102

**Control Limits** 65 - 135

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

## **Quality Control - Matrix Spike / Duplicate Results** Liquid

Reviewed by: MTU - 01/12/05

QC Batch ID: WGC4050110

**Analysis Date: 1/10/2005** 

D. (Purge	eable)							Conc. Uni	its: μg/L
. 0	Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
41926-00	5	and shaked the same				A STATE OF THE STA			
	ND	250	237	MS	1/10/2005	94.9			65 - 135
Recovery	<b>Control Limits</b>								
103	65 - 135								
41926-00	05								
	ND	250	236	MSD	1/10/2005	94.6	0.3	25	65 - 135
Recovery	<b>Control Limits</b>								
105	65 - 135								
	41926-00 Recovery 103 41926-00	Result	Sample Result   Spike Result	Sample Result   Spike Result	Sample Result	Sample Result   Spike Result   QC Type   Date	Sample Result	Sample Result	Sample Result   Spike Result   QC Type   Date   % Recovery   RPD   Limits

Method	d EPA 8020									Conc. Uni	its: μg/L
Paramet	er		Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS	SampleNumber:	41926-005									
Benzene			ND	2.8	2.94	MS	1/10/2005	105			65 - 135
Ethyl Bei	nzene		ND	3.7	3.27	MS	1/10/2005	89.1			65 - 135
Toluene			ND	16	16.4	MS	1/10/2005	100			65 - 135
Xylenes,	total		ND	20	17.9	MS	1/10/2005	91.4			65 - 135
MSD	SampleNumber:	41926-005								4.000	
Benzene			ND	2.8	3.28	MSD	1/10/2005	117	10.9	25	65 - 135
Ethyl Be	nzene		ND	3.7	3.30	MSD	1/10/2005	89.9	0.9	25	65 - 135
Toluene			ND	16	16.6	MSD	1/10/2005	101	0.8	25	65 - 135
Xvlenes.	total		ND	20	18.3	MSD	1/10/2005	93.7	2.4	25	65 - 135

 □ NPDES Detection Limits
 □ EDD Report Required
 □ EDF Report Required
 □ PDF File Required Chain of Custody / Analysis Request Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na. Se, Sr, Tl, Sn, Ti, V, Zn, W∶ RCRA-8 ☐ CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐ ロタのアナ Remarks Phone State Send Invoice to (if Different) Billing Address (if Different) Special Instructions or Comments Company Project Number: 98-139-60ourchase Order No (Reqd).: GANTWER Project Location: Project Name: Metals: いれる Phone No.: 107-151-0655 707-751-065 ☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 4 Day ☐ 5 Day ☐ 5 Day ☐ 5 Day Time: Composite 170/CV (408) 588-0201 - Fax **Turn Around Time** Entech Analytical Labs, Inc. Matrix Date: 12,20 (408) 588-0200 State: Sampling 505 Mailing Address: SOX 802 Field Org. Code: Lab. No. Santa Clara. CA 95054 JIM GREEN 3334 Victor Court Field PT Benich Mille JACISSON NFLUENT CFFLUGNI Relinquished by: Réfinquished by: Client ID: Attention to: Order ID:

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

## **FAX COVER SHEET**

DATE: /-/4-05	
TO: Company: ECM Group	
Attention: Jim bnew	
FAX: (707) 251-0653	
FROM: ENTER	
PAGES (INCLUDING COVER):	
MEMO: <u>4/929</u>	

IF THERE ARE ANY PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL (408) 588-0200

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Jim Green

Certificate ID: 42386 - 2/17/2005 6:35:20 PM

**ECM Group** 

290 W. Channel Rd.

Benicia, CA 94510

Order Number: 42386

Project Name: Gantner

Project Number: 98-439-60

Date Received: 2/11/2005 12:29:03 PM

P.O. Number: 98-439-60

## Certificate of Analysis - Final Report

On February 11, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

<u>Test</u>

Method

Comments

Liquid

8260Petroleum

EPA 8260B

TPH as Gasoline - GC/MS

GC-MS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy Laboratory Director

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

ECM Group 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green Project Number: 98-439-60 Project Name: Gantner Date Received: 2/11/2005 P.O. Number: 98-439-60 Sample Collected by: Client

### Certificate of Analysis - Data Report

Lab #: 42386-001 Sample ID: MID-A

Matrix: Liquid Sample Date: 2/10/2005 10:10 AM

Method: EPA 8260B - Gas C	hromatography/Ma	ss Spect	rometry	(GC/MS)					
Prep Method: EPA 5030B - I	Purge-and-Trap for	Aqueou	s Sampl	es					
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Toluene	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Methyl-t-butyl Ether	1.1		1	1	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Butanol (TBA)	41		1	10	μg/L	N/A	N/A	02/17/2005	WMS2050217
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217

Surrogate	Surrogate Recovery	Cor	tro	l Li	mits (%)		Analyzed by: 2
4-Bromofluorobenzene	88.2	,	15	-	125		Reviewed by:
Dibromofluoromethane	107	,	15	-	125		
Toluene-d8	100		15	-	125		

Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND	ND 1		25	μg/L	N/A	N/A	02/17/2005	WMS2050217
Surrogate	Surrogate Recovery	Co	ntrol L	imits (%)				Analyzed by: Xbian	1
4-Bromofluorobenzene	92.2		75 -	125				Reviewed by: MTU	J
Dibromofluoromethane	104		75 -	125					
Toluene-d8	96.9		75 -	125					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 2/11/2005 P.O. Number: 98-439-60 Sample Collected by: Client

## Certificate of Analysis - Data Report

Lab #: 42386-002 Sample ID: MID-B Matrix: Liquid Sample Date: 2/10/2005 10:15 AM

Prep Method:	EPA 5030B	- Purge-and-Trap f	for Aqueous S	amples
--------------	-----------	--------------------	---------------	--------

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		ı	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Toluene	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Methyl-t-butyl Ether	ND		1	1	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Butanol (TBA)	40		1	10	μg/L	N/A	N/A	02/17/2005	WMS2050217
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217

Surrogate	Surrogate Recovery	Control	Limits (%)
4-Bromofluorobenzene	88.0	75	- 125
Dibromofluoromethane	103	75	- 125
Toluene-d8	100	75	- 125

Analyzed by: Xbian

Reviewed by: MTU

### Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	$\mu g/L$	N/A	N/A	02/17/2005	WMS2050217
Surrogate	Surrogate Recovery	Со	ntrol Li	mits (%)			4.7	Analyzed by: Xbian	n
4-Bromofluorobenzene	92.1		75 -	125				Reviewed by: MTU	J
Dibromofluoromethane	101		75 -	125					
Toluene-d8	97.1		75 -	125					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 2/11/2005 P.O. Number: 98-439-60 Sample Collected by: Client

### **Certificate of Analysis - Data Report**

Lab #: 42386-003 Sample ID: Influent Matrix: Liquid Sample Date: 2/10/2005 10:05 AM

	Method:	EPA 8260B - Gas	Chromatography/Mass	Spectrometry (GC/MS)
--	---------	-----------------	---------------------	----------------------

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	9.3		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Toluene	1.7		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl Benzene	21		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Xylenes, Total	16		1	0.5	μg/L	N/A	N/A	02/17/2005	WMS2050217
Methyl-t-butyl Ether	7.0		1	1	μg/L	N/A	N/A	02/17/2005	WMS2050217
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Butanol (TBA)	43		1	10	μg/L	N/A	N/A	02/17/2005	WMS2050217
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	02/17/2005	WMS2050217

Surrogate	Surrogate Recovery	Cont	ol I	Limits (	)	Analyzed by: Xbian
4-Bromofluorobenzene	90.7	75	-	125		Reviewed by: MTU
Dibromofluoromethane	106	75	-	125		
Toluene-d8	98.5	75	-	125		

#### Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	370	1 2		25	25 μg/L	N/A	N/A	02/17/2005	WMS2050217
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: Xbian	n
4-Bromofluorobenzene	94.9		75 -	125				Reviewed by: MTU	J
Dibromofluoromethane	103		75 -	125					
Toluene-d8	95.3		75 -	125					

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

## Quality Control - Method Blank Liquid

Validated by: MTU - 02/17/05

QC Batch ID: WMS2050217

**Analysis Date: 2/17/2005** 

Method Blank	Meth	od: EPA 8260	В			
Parameter			Result	DF	PQLR	Units
Benzene			ND	1	0.5	μg/L
Diisopropyl Ether			ND	1	5	μg/L
Ethyl Benzene			ND	1	0.5	μg/L
thyl-t-butyl Ether			ND	1	5	μg/L
lethyl-t-butyl Ether			ND	1	1	μg/L
rt-Amyl Methyl Ether			ND	1	5	μg/L
rt-Butanol (TBA)			ND	1	10	μg/L
oluene			ND	1	0.5	μg/L
ylenes, Total			ND	1	0.5	$\mu g/L$
rrogate for Blank	% Recovery	<b>Control Limits</b>				
Bromofluorobenzene	87.3	75 - 125				
oromofluoromethane	110	75 - 125				
oluene-d8	106	75 - 125				

## Quality Control - Laboratory Control Spike / Duplicate Results Liquid

Reviewed by: MTU - 02/17/05

QC Batch ID: WMS2050217

**Analysis Date: 2/17/2005** 

LCS Method:	EPA 8260B						C	onc. Units:	μg/L	
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	<b>Analysis Date</b>	% Recovery	RPD	RPD Limits	Recovery Limits	
1,1-Dichloroethene	< 0.2	20.0	23	LCS	2/17/2005	115			80 - 120	
Benzene	< 0.2	20.0	19	LCS	2/17/2005	93.5			80 - 120	
Chlorobenzene	< 0.2	20.0	19	LCS	2/17/2005	93.0			80 - 120	
Methyl-t-butyl Ether	< 0.3	20.0	21	LCS	2/17/2005	107			80 - 120	
Toluene	<0.2	20.0	19	LCS	2/17/2005	95.5			80 - 120	
Trichloroethene	< 0.2	20.0	19	LCS	2/17/2005	95.5			80 - 120	
Surrogate	% Recovery	Control Lim	nits					and the day of the control of the co		
4-Bromofluorobenzene	92.4	75 - 125								
Dibromofluoromethane	112	75 - 125								
Toluene-d8	98.2	75 - 125		and the second				A - 11 M A 1111		
LCSD Method:	EPA 8260B						C	onc. Units:	ug/L	
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits	
1,1-Dichloroethene	<0.2	20.0	23	LCSD	2/17/2005	114	0.44	25.0	80 - 120	
Benzene	< 0.2	20.0	19	LCSD	2/17/2005	94.0	0.53	25.0	80 - 120	
Chlorobenzene	< 0.2	20.0	19	LCSD	SD 2/17/2005 93		<b>0.0</b> 25.0		80 - 120	
Methyl-t-butyl Ether	< 0.3	20.0	22	LCSD	2/17/2005	109	1.9	25.0	80 - 120	
Toluene	< 0.2	20.0	19	LCSD	2/17/2005	96.5	1.0	25.0	80 - 120	
Trichloroethene	< 0.2	20.0	19	LCSD	2/17/2005	94.5	1.1	25.0	80 - 120	
Surrogate	% Recovery	Control Lim	nits	manufacture of the control of				1 CA 3/17/4		
4-Bromofluorobenzene	93.4	75 - 125								
Dibromofluoromethane	113	75 - 125								
Toluene-d8	99.8	75 - 125	;							

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

# Quality Control - Method Blank

Liquid

Validated by: MTU - 02/17/05

QC Batch ID: WMS2050217

**Analysis Date: 2/17/2005** 

Method Blank	Meth	od: GC-MS				
Parameter			Result	DF	PQLR	Units
TPH as Gasoline			ND	1	25	μg/L
Surrogate for Blank	% Recovery	<b>Control Limits</b>				
4-Bromofluorobenzene	91.3	75 - 125				
Dibromofluoromethane	107	75 - 125				
Toluene-d8	103	75 - 125				

## Quality Control - Laboratory Control Spike / Duplicate Results Liquid

Reviewed by: MTU - 02/17/05

QC Batch ID: WMS2050217

Analysis Date: 2/17/2005

								Allalysis	Date: 2/1//200
LCS Meth	od: GC-MS						C	onc. Units:	μg/L
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<6	125.0	140	LCS	2/17/2005	110			65 - 135
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluoroben	zene 82	75 - 125	i						
Dibromofluoromet	hane 120	75 - 125	i						
Toluene-d8	109	75 - 125	make Follows Manager						
LCSD Meth	od: GC-MS						C	onc. Units:	μg/L
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	<b>Analysis Date</b>	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<6	125.0	130	LCSD	2/17/2005	104	5.9	25.0	65 - 135
Surrogate	% Recovery	Control Lin	nits					100 N 10 N 100 N 1	
4-Bromofluoroben	zene 95.2	75 - 125	;						
Dibromofluoromet	hane 112	75 - 125	;						
Toluene-d8	99.6	75 - 125	;						

Chain of Custody / Analysis Request				Zip		T DOMOSTO 4005	المراقب	192386-001	<b>4</b> 22	683						NPDES Detection Limits EDD Report Required	EUF Report Required PDF File Required	Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, Se, Sr, RCRA-8 ☐ CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐
SiS	Phone			State		WO!98 9/0	10 - SIBIO I 10 - SIBIO I					+						o, Ni, K, Si, PPM-13
Analy					Pomision		See See St										:	, Mg, Mn, Hg, M Plating □
stody /	Send Invoice to (if Different)	SAME	Billing Address (if Different)		C driver with	Oldelor	NO TOPORT									nts		Co, Cu, Fe, Pb, ☐ CAM-17 ☐
Cus	Send Invoi	Company	Billing Add	City:	D 2808 - 280	STEX STATES OF S	ANUSE RACE SERVET OF SERVET SE									Comme		cd, Ca, Cr, RCRA-8
Chain of	Purchase Order No (Reqd).:	Project Number:		Project Location:	1 509/10 X	1002 1806 1002 4 4002 1028 4 9002 1028 70 0108 102 49 831116	D. Soppone		KC X	X X						Special Instructions or Comments	Metals:	Al, As, Sb, Ba, Be, B, Cd Tl, Sn, Ti, V, Zn, W : R
	ŀ	1	1	2	y 4 y 2	saət	Grab Contair	メ	*	<i>χ</i>		_				Times,	<b>13%</b> Time:	Time:
C Fax	90-1	90-		2p:	Id Time 1 1 Day 2 3 Day 5 Day		Matrix Compo	3	3	\A		-				To leave	3	
Labs, In (408) 588-0200	Phone No.:	Fax No.:	email:	State:	\roun	tandard (10 Day)	Time	1=	+	10(65					\	To Date	20 CC - 20 CC	Date:
1 La (408) (408)					Tu Same 2 Day 4 Day	Standard Samplin	Date	201016	2/10/05	) ( <b>%</b> ) (8)	-						3	.;
Entech Analytical Labs, Inc. 3334 Victor Court (408) 588-0200	( )	₹ 4	X 0 X		Field Org. Code:		Lab. No.								1	Heceived by	Received by:	Received bv:
Ch An	7 0 to 10		18	BENICA	1 1		Field PT											
Entech Ar 3334 Victor Court	Attention to:	Company Name:	Mailing Address:	City: BER	Sampler: VNIKE JA Global ID:	Order ID:	Client ID:	A COM	M 10 - K	INFLENT				,		Relingatefied by		Relinguished by:

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Jim Green

**ECM** Group

290 W. Channel Rd.

Benicia, CA 94510

Order Number: 42777

Project Name: Gantner

Project Number: 98-439-14

Certificate ID: 42777 - 3/22/2005 3:18:28 PM

Date Received: 3/11/2005 1:45:33 PM

P.O. Number: 98-439-14

## Certificate of Analysis - Final Report

On March 11, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

<u>Test</u>

Method

Comments

Liquid

8260Petroleum

EPA 8260B

TPH as Gasoline - GC/MS

GC-MS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

ECM Group 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green Project Number: 98-439-14 Project Name: Gantner Date Received: 3/11/2005 P.O. Number: 98-439-14 Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab #: 42777-001 Sample ID: MW-1

Matrix: Liquid Sample Date: 3/10/2005

11:50 AM

Method: E	EPA 8260B - C	Gas Chromat	ography/Mass	Spectrometry	(GC/MS)
-----------	---------------	-------------	--------------	--------------	---------

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Toluene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Methyl-t-butyl Ether	ND		1	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Butanol (TBA)	ND		1	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: Xbian
4-Bromofluorobenzene	103	75 - 125	Reviewed by: MTU
Dibromofluoromethane	107	75 - 125	
Toluene-d8	107	75 - 125	

Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Parameter	Result	Flag	DF		Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		J		25	μg/L	N/A	N/A	03/21/2005	WMS1050321
Surrogate	Surrogate Recovery	Co	ntrol	Limi	its (%)		***************************************	The state of the s	Analyzed by. Xbian	1
4-Bromofluorobenzene	105		75	- 1	25				Reviewed by: MTU	J
Dibromofluoromethane	111		75 ·	- 1	.25					
Toluene-d8	111		75 ·	- 1	25					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

QC Batch

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-14 Project Name: Gantner Date Received: 3/11/2005 P.O. Number: 98-439-14 Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab #: 42777-002 Sample ID: MW-2 Matrix: Liquid Sample Date: 3/10/2005 11:30 AM

Method: EPA 8260B - Ga		-						
Prep Method: EPA 5030E Parameter	3 - Purge-and-Trap to Result	r Aqueou Flag	s Sampi DF	es Detection Limit	Units	Prep Date	Prep Batch	Analysis Date
Benzene	31		2	1	μg/L	N/A	N/A	03/21/2005
Toluene	2.3		2	1	μg/L	N/A	N/A	03/21/2005
Ethyl Benzene	99		2	1	μg/L	N/A	N/A	03/21/2005
Xvlenes, Total	9.5		2	1	μg/L	N/A	N/A	03/21/2005

Benzene	31	2	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Toluene	2.3	2	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl Benzene	99	2	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Xylenes, Total	9.5	2	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Methyl-t-butyl Ether	ND	2	2	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl-t-butyl Ether	ND	2	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Butanol (TBA)	ND	2	20	μg/L	N/A	N/A	03/21/2005	WMS1050321
Diisopropyl Ether	ND	2	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Amyl Methyl Ether	ND 1	2	10	μg/L	N/A	N/A	03/21/2005	WMS1050321

Surrogate	Surrogate Recovery	Control Limits (%)	
4-Bromofluorobenzene	90.7	75 - 125	
Dibromofluoromethane	105	75 - 125	
Toluene-d8	96.8	75 - 125	

Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Parameter	Result	Flag l	<b>DF</b>	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	1400	No. 10 to	2	50	μg/L	N/A	N/A	03/21/2005	WMS1050321
Surrogate	Surrogate Recovery	Contr	ol Li	mits (%)			***************************************	Analyzed by Xbian	l
4-Bromofluorobenzene	92.2	75	-	125				Reviewed by: MTU	
Dibromofluoromethane	109	75	- "	125					
Toluene-d8	101	75	-	125					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

ECM Group 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green Project Number: 98-439-14 Project Name: Gantner Date Received: 3/11/2005 P.O. Number: 98-439-14 Sample Collected by: Client

## Certificate of Analysis - Data Report

Lab #: 42777-003 Sample ID: MW-3

Matrix: Liquid Sample Date: 3/10/2005 11:05 AM

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	5300		200	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
Toluene	1200		200	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl Benzene	2700		200	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
Xylenes, Total	11000		200	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
Methyl-t-butyl Ether	ND		200	200	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl-t-butyl Ether	ND		200	1000	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Butanol (TBA)	ND		200	2000	μg/L	N/A	N/A.	03/21/2005	WMS1050321
Diisopropyl Ether	ND		200	1000	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Amyl Methyl Ether	ND		200	1000	μg/L	N/A	N/A	03/21/2005	WMS1050321

Surrogate	Surrogate Recovery	Cont	rol	Li	mits (%)			Analyzed by Xbian
4-Bromofluorobenzene	99.6	7.	5	-	125			Reviewed by: MTU
Dibromofluoromethane	104	7.	5	-	125			
Toluene-d8	102	7	5	-	125			

Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	41000	200		5000	μg/L	N/A	N/A	03/21/2005	WMS1050321
Surrogate	Surrogate Recovery	Con	trol Li	nits (%)				Analyzed by: Xbian	
4-Bromofluorobenzene	101	7	'5 -	125				Reviewed by: MTU	
Dibromofluoromethane	108	7	15 -	125					
Toluene-d8	106	7	15 -	125					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

ECM Group 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green Project Number: 98-439-14 Project Name: Gantner Date Received: 3/11/2005 P.O. Number: 98-439-14 Sample Collected by: Client

## Certificate of Analysis - Data Report

Lab #: 42777-004 Sample ID: MW-4

Matrix: Liquid Sample Date: 3/10/2005 10:55 AM

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/	MS)
---	-----

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	860		20	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Toluene	17		20	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl Benzene	40		20	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Xylenes, Total	ND		20	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Methyl-t-butyl Ether	83		20	20	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl-t-butyl Ether	ND		20	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Butanol (TBA)	ND		20	200	μg/L	N/A	N/A	03/21/2005	WMS1050321
Diisopropyl Ether	ND		20	100	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Amyl Methyl Ether	ND		20	100	μg/L	N/A	N/A	03/21/2005	WMS1050321

Surrogate	Surrogate Recovery	Control Limits (%)		Analyzed by: Xbian
4-Bromofluorobenzene	102	75 - 125		Reviewed by: MTU
Dibromofluoromethane	102	75 - 125		
Toluene-d8	107	75 - 125		

#### Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	8000		20	500	μg/L	N/A	N/A	03/21/2005	WMS1050321
Surrogate	Surrogate Recovery	Со	ntrol Li	mits (%)				Analyzed by: Xbian	1
4-Bromofluorobenzene	104		75 -	125				Reviewed by: MTU	J
Dibromofluoromethane	106		75 -	125					
Toluene-d8	111		75 -	125					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-14 Project Name: Gantner Date Received: 3/11/2005 P.O. Number: 98-439-14 Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab #: 42777-005

Sample ID: MW-5

Matrix: Liquid Sample Date: 3/10/2005

Analyzed by: Xbian Reviewed by: MTU 10:36 AM

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Pt Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Toluene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	03/21/2005	WMS1050321
Methyl-t-butyl Ether	ND		1	1	μg/L	N/A	N/A	03/21/2005	WMS1050321
Ethyl-t-butyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Butanol (TBA)	ND		1	10	μg/L	N/A	N/A	03/21/2005	WMS1050321
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	03/21/2005	WMS1050321

Surrogate	Surrogate Recovery	Control Limits (%)	
4-Bromofluorobenzene	103	75 - 125	
Dibromofluoromethane	105	75 - 125	
Toluene-d8	104	75 - 125	

Method: GC-MS - Gas Chromatography/Mass Spectrometry (GC/MS)

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	25	μg/L	N/A	N/A	03/21/2005	WMS1050321
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: Xbian	n.
4-Bromofluorobenzene	105		75 -	125				Reviewed by: MTU	J.
Dibromofluoromethane	109		75 -	125					
Toluene-d8	108		75 -	125					

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

## Quality Control - Method Blank Liquid

Validated by: MTU - 03/22/05

QC Batch ID: WMS1050321

**Analysis Date: 3/21/2005** 

Method Blank	Meth	od: EPA 8260	В			
Parameter			Result	DF	PQLR	Units
Benzene			ND	1	0.5	μg/L
Diisopropyl Ether			ND	1	5	μg/L
Ethyl Benzene			ND	1	0.5	μg/L
Ethyl-t-butyl Ether			ND	1	5	μg/L
Methyl-t-butyl Ether			ND	1	1	μg/L
tert-Amyl Methyl Ether			ND	1	5	μg/L
tert-Butanol (TBA)			ND	1	10	μg/L
Toluene			ND	1	0.5	μg/L
Xylenes, Total			ND	1	0.5	μg/L
Surrogate for Blank	% Recovery	<b>Control Limits</b>				
4-Bromofluorobenzene	101	75 - 125				
Dibromofluoromethane	102	75 - 125				
Toluene-d8	105	75 - 125				

## Quality Control - Laboratory Control Spike / Duplicate Results Liquid

Reviewed by: MTU - 03/22/05

QC Batch ID: WMS1050321

Analysis Date: 3/21/2005

LCS Method:	EPA 8260B						C	onc. Units:	μg/L
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.2	20.0	21	LCS	3/21/2005	103			80 - 120
Methyl-t-butyl Ether	< 0.3	20.0	22	LCS	3/21/2005	112			80 - 120
Toluene	<0.2	20.0	20	LCS	3/21/2005	100			80 - 120
Surrogate	% Recovery	Control Lim	nits						
4-Bromofluorobenzene	102	75 - 125							
Dibromofluoromethane	101	75 - 125							
Toluene-d8	98.8	75 - 125				- AND			
I COD NE II	TD 4 02 (0D						(	Conc. Units:	ug/I
LCSD Method:	EPA 8260B Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.2	20.0	20	LCSD	3/21/2005	102	0.98	25.0	80 - 120
Methyl-t-butyl Ether	< 0.3	20.0	22	LCSD	3/21/2005	109	2.7	25.0	80 - 120
Toluene	<0.2	20.0	20	LCSD	3/21/2005	99.5	0.50	25.0	80 - 120
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	101	75 - 125	;						
Dibromofluoromethane	99.8	75 - 125	5 .						
Toluene-d8	99.4	75 - 125	5 4 4						

3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

## **Quality Control - Method Blank**

#### Liquid

Validated by: MTU - 03/22/05

QC Batch ID: WMS1050321

Analysis Date: 3/21/2005

Method Blank	Meth	od: GC-MS					
Parameter			Result	ÐF	PQLR	Units	
TPH as Gasoline			ND	1	25	μg/L	
Surrogate for Blank	% Recovery	<b>Control Limits</b>					
4-Bromofluorobenzene	103	75 - 125					
Dibromofluoromethane	106	75 - 125					
Toluene-d8	109	75 - 125					

## Quality Control - Laboratory Control Spike / Duplicate Results Liquid

Reviewed by: MTU - 03/22/05

QC Batch ID: WMS1050321

Analysis Date: 3/21/2005

									Analysis	Date. 3/21/200.
LCS Met Parameter TPH as Gasoline	thod:	GC-MS Blank (MDL)	Spike Amt 125.0	SpikeResult	QC Type	Analysis Date 3/21/2005	% Recovery	C RPD	onc. Units: RPD Limits	
Surrogate		% Recovery	Control Lim	nits		444	20 10 10 10 T			100111111111111111111111111111111111111
4-Bromofluorobe	enzene	105	75 - 125							
Dibromofluorom	ethane	105	75 - 125							
Toluene-d8	3	111	75 - 125							
LCSD Met	thod:	GC-MS						C	Conc. Units:	μg/L
Parameter		Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline		<6	125.0	120	LCSD	3/21/2005	98.7	5.1	25.0	65 - 135
Surrogate	e	% Recovery	Control Lin	nits						
4-Bromofluorobo	enzene	105	75 - 125	5						
Dibromofluorom	nethane	106	75 - 125	5						
Toluene-d8	8	111	75 - 125	5 .						

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

## Quality Control - Matrix Spike / Duplicate Results Liquid

Reviewed by: MTU - 03/22/05

QC Batch ID: WMS1050321

Analysis Date: 3/21/2005

Method	d EPA 8260B									Conc. Un	its: μg/L
Paramet			Sample Result	Spike Amount	Spike Result	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
MS	SampleNumber:	42852-021									
1,1-Dichl	loroethene		ND	20	19.3	MS	3/21/2005	96.5			65 - 135
Benzene			ND	20	20.6	MS	3/21/2005	103			65 - 135
Chlorobe	enzene		ND	20	20.8	MS	3/21/2005	104			65 - 135
Methyl-t-	-butyl Ether		ND	20	21.5	MS	3/21/2005	108			65 - 135
Toluene			ND	20	20.9	MS	3/21/2005	105			65 - 135
Trichlore	oethene		0.556	20	19.9	MS	3/21/2005	96.7			65 - 135
			· <del>· · · · · · · · · · · · · · · · · · </del>								
MSD	SampleNumber:	42852-021				Made	2/21/2005	00.5	2.1	25	65 - 135
1,1-Dich	loroethene		ND	. 20	19.7	MSD	3/21/2005	98.5	2.1		
Benzene			ND	20	20.8	MSD	3/21/2005	104	1.0	25	65 - 135
Chlorobe	enzene		ND	20	21.3	MSD	3/21/2005	107	2.4	25	65 - 135
Methyl-t	-butyl Ether		ND	20	22.2	MSD	3/21/2005	111	3.2	25	65 - 135
Toluene	•		ND	. 20	21.3	MSD	3/21/2005	107	1.9	25	65 - 135
Trichloro	oethene		0.556	20	20.4	MSD	3/21/2005	99.2	2.5	25	65 - 135

abs, Inc. Chain of Custody / Analysis Request	V	<u>a</u> 0	Project Name: Billing Address (if Different)	1	Day (20 0 2) 20 20 20 20 20 20 20 20 20 20 20 20 20	estina estina	Time Matrix Companies of School of S	11:50% X4 #x X X		11,05 W X 450,11	7 X:	3 CS				Special Instructions or Comments  Dark (1/6) Time: Metals:  Dark (1/6) Time: Metals:  Dark (1/6) Time:
Labs, Inc. (408) 588-0200 (408) 588-0201 - Fax	SI-0655	Fax No.:	email:	25.00 AS 1.00	ay bay	əşiso	Matrix Comp	5 11:50W X	X 05:1	X 2	72 :	31				Syllo, Date:
Entech Analytical Labs, Inc 3334 Victor Court (408) 588-0200	Attention to:	Company Name:	Mailing Address:	SIN STATE OF SINGLES	Org. Code:	Order ID:	Client ID: Field PT Lab. No.	naun-ec	3 ( )	3		MM-5 603			7	Relinguished by:  Relinguished by:  Relinguished by:  Relinguished by:  Received by:

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Jim Green

Certificate ID: 43109 - 4/14/2005 5:06:48 PM

ECM Group

290 W. Channel Rd. Benicia, CA 94510

Order Number: 43109

Project Name: Gantner Project Number: 98-439-60 Date Received: 4/7/2005 2:06:16 PM

P.O. Number: 98-439-60

## Certificate of Analysis - Final Report

On April 07, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

Test

Method

Comments

Liquid

EPA 8260B

EPA 8260B

Volatile-GC

mun Heeple For:

EPA 8015 MOD. (Purgeable)

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy

Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 4/7/2005 P.O. Number: 98-439-60 Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab #: 43109-001

Sample ID: MID-A

Matrix: Liquid Sample Date: 4/5/2005

1:50 PM

Method: EPA 8015 MOD. (Purgeable)

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	50	μg/L	N/A	N/A	04/07/2005	WGC4050407
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mruar	n
4-Bromofluorobenzene	97.8		65 -	135				Reviewed by: MTU	J

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch	
Benzene	ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Toluene	ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Xylenes, Total	ND		1 .	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Methyl-t-butyl Ether	ND		1	1	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Butyl Ethyl Ether	ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Butanol (TBA)	24		1	10	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Diisopropyl Ether	ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Amyl Methyl Ether	ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	

Surrogate	Surrogate Recovery	Control Limits (%)					
4-Bromofluorobenzene	96.7	75	-	125			
Dibromofluoromethane	102	75	-	125			
Toluene-d8	102	75	-	125			

Analyzed by: Xbian

Reviewed by: MTU

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 4/7/2005 P.O. Number: 98-439-60 Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab#: 43109-002

Sample ID: MID-B

Matrix: Liquid Sample Date: 4/5/2005

1:55 PM

Method: EPA 8015 MOD. (Purgeable)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	50	μg/L	N/A	N/A	04/07/2005	WGC4050407
Surrogate	Surrogate Recovery Control Limits (%)			mits (%)				Analyzed by mruai	1
4-Bromofluorobenzene	96.7		65 -	135				Reviewed by: MTU	J

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch	
ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	0.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	1	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
30		1	10	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
ND		1	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
	Result  ND  ND  ND  ND  ND  ND  ND  ND  ND  N	Result Flag  ND  ND  ND  ND  ND  ND  ND  ND  ND  N	Result         Flag         DF           ND         1           ND         1	ND 1 0.5 ND 1 1 5 ND 1 1 5 30 1 10 ND 1 5	Result         Flag         DF         Detection Limit         Units           ND         1         0.5         μg/L           ND         1         0.5         μg/L           ND         1         0.5         μg/L           ND         1         1         μg/L           ND         1         5         μg/L           ND         1         10         μg/L           ND         1         5         μg/L           ND         1         5         μg/L           ND         1         5         μg/L	Result         Flag         DF         Detection Limit         Units         Prep Date           ND         1         0.5         μg/L         N/A           ND         1         0.5         μg/L         N/A           ND         1         0.5         μg/L         N/A           ND         1         1         μg/L         N/A           ND         1         5         μg/L         N/A	Result         Flag         DF         Detection Limit         Units         Prep Date         Prep Batch           ND         1         0.5         μg/L         N/A         N/A           ND         1         0.5         μg/L         N/A         N/A           ND         1         0.5         μg/L         N/A         N/A           ND         1         1         μg/L         N/A         N/A           ND         1         5         μg/L         N/A         N/A	Result         Flag         DF         Detection Limit         Units         Prep Date         Prep Batch         Analysis Date           ND         1         0.5         μg/L         N/A         N/A         04/11/2005           ND         1         0.5         μg/L         N/A         N/A         04/11/2005           ND         1         0.5         μg/L         N/A         N/A         04/11/2005           ND         1         1         μg/L         N/A         N/A         04/11/2005           ND         1         5         μg/L         N/A         N/A         04/11/2005	

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.4	75 - 125
Dibromofluoromethane	104	75 - 125
Toluene-d8	101	75 - 125

Analyzed by: Xbian Reviewed by: MTU

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**ECM Group** 

290 W. Channel Rd. Benicia, CA 94510 Attn: Jim Green

Project Number: 98-439-60 Project Name: Gantner Date Received: 4/7/2005 P.O. Number: 98-439-60

Sample Collected by: Client

#### Certificate of Analysis - Data Report

Lab #: 43109-003

4-Bromofluorobenzene

Sample ID: Influent

Matrix: Liquid Sample Date: 4/5/2005

Reviewed by: MTU

Analyzed by Xbian Reviewed by MTU 1:35 PM

Method: EPA 8015 MOD. (Purgeable)

Prop Mothod: EPA 5030R - Purge-and-Tran for Aqueous Samples

Parameter	Result	Flag DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	2100	5	250	μg/L	N/A	N/A	04/07/2005	WGC4050407
Surrogate	Surrogate Recovery	Control Li	mits (%)				Analyzed by mrua	n

High surrogate recovery for BFB due to matrix interference

Method: EPA 8260B - Gas Chromatography/Mass Spectrometry (GC/MS)

204\*\*\*

Prep Method: EPA 5030B - Purge-and-Trap for Aqueous Samples

Parameter	Result	Flag	DF	<b>Detection Limit</b>	Units	Prep Date	Prep Batch	Analysis Date	QC Batch	
Benzene	38		5	2.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Toluene	4.7		5	2.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Ethyl Benzene	130		5	2.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Xylenes, Total	42		5	2.5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Methyl-t-butyl Ether	ND		5	5	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Butyl Ethyl Ether	ND		5	25	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Butanol (TBA)	ND		5	50	μg/L	N/A	N/A	04/11/2005	WMS1050411	
Diisopropyl Ether	ND		5	25	μg/L	N/A	N/A	04/11/2005	WMS1050411	
tert-Amyl Methyl Ether	ND		5	25	μg/L	N/A	N/A	04/11/2005	WMS1050411	

Surrogate	Surrogate Recovery	Contro	H	mits (%)
4-Bromofluorobenzene	90.4	75	-	125
Dibromofluoromethane	104	75	-	125
Toluene-d8	94.3	75	-	125

65 - 135

ND = Not Detected at or above the Detection Limit.

3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

## Quality Control - Method Blank Liquid

QC Batch ID: WGC4050407

Validated by: MTU - 04/12/05

QC Batch ID Analysis Date: 4/7/2005

Method Blank Method: EPA 8015 MOD. (Purgeable)

Parameter Result DF PQLR Units TPH as Gasoline ND 1 50  $\mu$ g/L

TPH as Gasoline ND 1 50 µg/L
Surrogate for Blank % Recovery Control Limits

Surrogate for Blank % Recovery Control Limits
4-Bromofluorobenzene 96.3 65 - 135

## Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Reviewed by: MTU - 04/12/05

QC BatchID: WGC4050407 Analysis Date: 4/7/2005

Method: EPA 8015 MOD. (Purgeable) Conc. Units: μg/L

LCS

ParameterBlank (MDL)Spike AmtSpikeResult% RecoveryRPDRPD LimitsRecovery LimitsTPH as Gasoline<4</td>25025010265 - 135

Surrogate % Recovery Control Limits

4-Bromofluorobenzene **102** 65 - 135

Method: EPA 8015 MOD. (Purgeable) Conc. Units: µg/L

LCSD

RPD **RPD** Limits **Recovery Limits** Parameter Blank (MDL) Spike Amt SpikeResult % Recovery TPH as Gasoline <4 250 260 104 2.2 25.0 65 - 135

4-Bromofluorobenzene 97.5 65 - 135

3334 Victor Court , Santa Clara, CA 95054 Pho

Phone: (408) 588-0200 Fax: (408) 588-0201

# Quality Control - Method Blank

Liquid

QC Batch ID: WMS1050411

Validated by: MTU - 04/12/05

QC Batch ID Analysis Date: 4/11/2005

Method Blank	Meth	od: EPA 8260	В			
Parameter			Result	DF	PQLR	Units
Benzene			ND	1	0.5	μg/L
Diisopropyl Ether			ND	1	5	μg/L
Ethyl Benzene			ND	1	0.5	μg/L
Methyl-t-butyl Ether			ND	1	1	μg/L
tert-Amyl Methyl Ether			ND	1	5	μg/L
tert-Butanol (TBA)			ND	1	10	μg/L
tert-Butyl Ethyl Ether			ND	1	5	μg/L
Toluene			ND	. 1	0.5	μg/L
Xylenes, Total			ND	1	0.5	μg/L
Surrogate for Blank	% Recovery	Control Limits				
4-Bromofluorobenzene	96.1	75 - 125				
Dibromofluoromethane	103	75 - 125				
Toluene-d8	102	75 - 125				

## Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

Toluene-d8

95.8

75 - 125

Reviewed by: MTU - 04/12/05

QC BatchID: WMS1050411 Analysis Date: 4/11/2005

Method: EPA 8260	В			Conc. Units: µg/L											
LCS Parameter	В	Blank (MDL)	Spike Amt	SpikeResult	% Recovery	RPD	RPD Limits	Recovery Limits							
Benzene		<0.2	20	20	99.5			80 - 120							
Methyl-t-butyl Ether		< 0.3	20	22	109			80 - 120							
Toluene		<0.2	20	19	97.0			80 - 120							
Surrogate	% Recovery	Control Li	mits												
4-Bromofluorobenzene	94.6	75 - 13	25												
Dibromofluoromethane	96.8	75 - 1:	25												
Toluene-d8	95.7	75 - 1	25												
Method: EPA 8260	)B				Conc. Un	its: μg	;/L								
LCSD															
Parameter	F	Blank (MDL)	Spike Amt	SpikeResult	% Recovery	RPD	RPD Limits	Recovery Limits							
Benzene		< 0.2	20	22	109	9.6	250	80 - 120							
Methyl-t-butyl Ether		<0.3	20	24	119	8.8	25.0	80 - 120							
Toluene		< 0.2	20	. 22	108	11	25.0	80 - 120							
Surrogate	% Recovery	Control Li	mits												
4-Bromofluorobenzene	95.6	75 - 1	25												
Dibromofluoromethane	99.5	75 - 1	25												

+-								5	Ø	503									its			
Request							arks	43164-00	B	ಷ									NPDES Detection Limits EDD Report Required	EDF Report Required  PDF File Required	Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, Se, Sr, Tl, Sn, Ti, V, Zn, W∶ RCRA-8 ☐ CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 [	
nk							Remarks	310											t Red	r Require	Na, S	
Şe							274	7			-	-	+	+		-	-	-	S De	leportile Re	, Ag,	
12				diZ		MojossiQ MojossiQ	~					$\dashv$	-			+			PDE	7 70	K, Si M-13	
<u>S</u>	Phone			State		WOISE GOT	Sieleli						$\dashv$				_				o, N.	
<u>&gt;</u>	<u></u>			0)															]		ð Ď□	
٦a						\b)						_	-	_		_	_		1		y, Mn, He	
Chain of Custody / Analysis					2000	0.00	CHAPT Selo & IO					$\dashv$	_	-	_		$\perp$				Mg,	
	ju (ju	<u> </u>	int)		C anuear numico he anue numic		NO					+	_	_	+	+	-		-		, Pb,	
þ	Differe	SAME	Differe		aldealing to	96.15/M	110,10					$\dashv$			$\dashv$		$\dagger$				Cu, Fe, Pb CAM-17 □	
ţ	Send Invoice to (if Different)	S	Billing Address (if Different)				J JON J JOSOJO												] st		8 🗖	ı
ns	Invoic	any	g Addr		739	# # # # # # # # # # # # # # # # # # #	JON JONS												Jue		, O, 8-	
Ö	Send	Company	Billin	City:	D 5808 - 8804	#318s	Se Hal	_	. ,		,		_	_			_		- [2		2d, Ca, Cl RCRA-8	
of				e	80020	01800	1		X	×	<b>\</b>	_	$\dashv$	-+		$\dashv$	-		Special Instructions or Comments		, S	
$\Box$	(Reqd).	1	A A B A		209/ 100/0	1 1808 18 19 09 28 14 0108 5 19 0108	\$ 30 JOHS 8 4	-				7	$\dashv$	$\dashv$	$\dashv$	+			uctio		a, Be, Zn, V	
<u>a</u>	der No	ber:		tion:		18 Ag SOIVE 6	OUXO 1917	$\times$	×	Х									Instr		3b, B.	
$\dot{\varsigma}$	Purchase Order No (Reqd).:	Project Number:	Project Name:	Project Location:			Ollielo1								_		_	_	ecial	Metals:	Al, As, Sb, Ba, Be, B, Tl, Sn, Ti, V, Zn, W :	
	Purch		_	Proje		evitev	فلنت بجري ويور	至	-	댗	-					4	_		Sp	∑ \	<u>₹</u>	4
	55	15 X		9		2190	Grab Contai	4 /	X	N					_	$\dashv$	_			Time:	Time:	
, ×	. 065	- 265		Zp: Zp:	Fime 1 Day 3 Day 5 Day 5 Day	<u></u>	Comp	I											K	8	+	1
<b>nc.</b>	10	N 15	2	idiZ	16		Matrix		<b>38</b>	3				_	+	-			1		Date:	
Labs, In (408) 588-0200	Phone No.:		email:	State:	Arou	ng	Time	13:50	3.55	3,35												1
ab:	<u>€</u> 1	E L	en en	St	Turn A Same Day 2 Day 4 Day Standard	Sampling		-	+	-					+				$\prec$	3		
(408 (408					Turn Aroun  Same Day  2 Day  4 Day  Standard (10	S	Date	#ISION			•								}	il.		
ca																		-	#\   		Received by:	
yti	,		d		g. Code		Lab. No.												Regeived			4
naly	COCE	3			Field Org. Code				+	-	-					-	$\dashv$		太			
Ar		0 ( \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	()				Field PT												X	X	2	Ì
Entech Analytical Labs, Inc	tention to:		Address:	RENTERA	CIKS		Fig.	+-		1	_		_					+				
te vic	2 : 5 2 : 5	y Name	Address	1 2		ä	ë	4 - V - M	110 1 110 1 K		2								Relinguished by:	Relinquished by:	Helinquished by:	
333 <sup>2</sup>	Santa Vittention to:	Sompany Name:	Mailing Address:		Sampler: MiKE TACKSOA Global ID:	Order ID:	Client ID:	2			2								Religa	Reling	Reling	

# Appendix E Standard Operating Procedures

#### ECM STANDARD OPERATING PROCEDURE

#### **GROUND WATER SAMPLING**

The following describes sampling procedures used by ECM field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is purged of a minimum of three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed 10%).

Ground water samples are collected from the wells/borings with steam-cleaned or disposable Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4 C with blue ice or ice) for transport under chain-of-custody to the laboratory.

The chain-of-custody form includes the project number, analysis requested, sample ID, date analysis and the ECM field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.